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EXAMINER
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YAO, SAMCHUAN CUA

ART UNIT	PAPER NUMBER
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1733

DATE MAILED: 03/30/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/625,212

Applicant(s)

HAMRICK ET AL

Examiner

Sam Chuan C. Yao

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 23 July 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-29 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-29 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 8, 14, 21, 24-29 and 28 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 8 is indefinite, because it is unclear what is intended by the phrase "*relative short connecting tubes*". How many feet can tube have for the tube to be reasonably considered to be "*relative short*"? Without definitional guideline for an intended scope of this phrase, it would be difficult to reasonably discern the metes and bound of this claim.

Claims 14, 21, and 28 are indefinite, because it is unclear which processing zones is this process step referring to. Is the recited thermal rise referring to a temperature of a polyurethane around: a mixing zone, a polyurethane coating zone, or a steam-treatment zone? It is assumed to be a temperature rise in a mixing zone.

Claims 24-29 are indefinite, because it is unclear at what temperature is taken to be an ambient temperature. An ambient temperature varies significantly depending on the season (i.e. winter, spring or summer).

***Claim Rejections - 35 USC § 102/103***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 17, 19, 24 and 26 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Walker et al (US 4,515,646).

With respect to claims 17 and 24, Walker et al discloses a process of making a carpet, the process comprises the following sequence of steps: a) providing two separate tubes, each for delivering independently a polyol and an isocyanate, respectively into a dispenser; mixing the polyol and the isocyanate in the dispenser (11; taken to be a mixing head) to form a polyurethane; dispensing the polyurethane in the dispenser through a nozzle (12) onto an underside surface of a primary backing of a greige (10) to form a tacky polyurethane-coated greige; applying a steam to the polyurethane-coated greige; and, contacting a secondary backing with the polyurethane-coated greige (col. 3 lines 35-51; col. 4 lines 4-19, 51-68; col. 5 lines 3-43; col. 6 lines 40-54; figure 3). It would appear that, the

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recited "die" fails to structurally distinguish over a dispensing nozzle taught by Walker et al, since this die is merely used to spray a polyurethane adhesive (see claim 20, for example). In other words, the recited die is not used to draw a polyurethane adhesive to a desired shape. In any event, such would have been obvious in the art, because it is conventional in the art to apply a polyurethane adhesive to a substrate using a dispenser which includes a die head. See numbered paragraph 11 below for illustrations of various dispensers which include a die head. As for a limitation of applying a polyurethane adhesive under ambient temperature in claim 24, an adhesive dispenser suggested by Walker et al is not coupled to a coolant or a heater, therefore, the adhesive dispenser is applied under ambient condition (i.e. temperature).

With respect to claims 19 and 26, these claims read on a process where no filler is used. In any event, Walker et al teaches optionally adding a filler such as a calcium carbonate in an amount of 1-250 part of filler/100 part of polyol to a polyurethane to reduce cost and adjust a viscosity of the polyurethane (col. 9 lines 35-50).

6. Claims 18, 23, 25, and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Walker et al (US 4,515,646) as applied to claim 17 or 24 above.

With respect to claims 18 and 25, one in the would have determined, by routine experimentation, a suitable amount of polyurethane adhesive which would be needed to effectively fiber lock the tuft in a greige and provide a required

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annealing strength (i.e. bonding strength between a greige and a secondary backing). Moreover, the recited amount of coating is taken to be old in the art.

With respect to claim 23, since Walker et al teaches that *"the polyurethane compounds directed through the tube 14 to the dispenser 11 are mixed with less water than would be utilized for a conventional polyurethane formulation."* (col. 5 lines 1-20), and since one in the art would have determined, by routine experimentation, a workable water composition contained in a polyurethane (taking into account a water that will be added by a steam), this claim would have been obvious in the art.

With respect to claim 29, a spun-bonded secondary fabric is well known in the art of making a carpet.

7. Claims 20, 22 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Walker et al (US 4,515,646) as applied to claim 17 or 24 above, and further in view of Gilbert (US 4,156,041).

With respect to claims 20 and 27, since it is old in the art to provide a metallic or an amine catalyst to a polyurethane adhesive and to store and introduce the catalyst in separate storage and delivery line as exemplified in the teachings of Gilbert (col. 2 lines 46-66; col. 3 lines 39-50; figure 1) in order to prevent the adhesive from prematurely curing, these claims would have been obvious in the art. Note: claim 27 does not require providing a dedicated line for a catalyst.

With respect to claim 22, see column 2 lines 54-58 of the Gilbert patent.

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8. Claims 21 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over the references set forth in numbered paragraph 5 as applied to claim 17 or 28 above, and further in view of Jennings et al (US 5,908,701).

Jennings et al, drawn to making a polyurethane coated carpet backing, teaches limiting a thermal rise in a mixer for various polyurethane component streams to less than 30 °F to prevent significant increase in viscosity (col. 5 lines 11-29).

Therefore, these claims would have been obvious in the art.

9. Claims 1-9 and 11-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Walker et al (US 4,515,646) in view of Gilbert (US 4,156,041), Hopkins. Jr. et al (US 3,926,700) and optionally further in view of Anderson, Jr. et al (US 3,933,548).

The discussion of Walker et al is set forth in numbered paragraph 5 is incorporated herein. Walker et al further teaches using blowing air using an air-knife onto a polyurethane coating on an underside surface of a greige to obtain a desired and uniform coating level (col. 4 lines 21-33). In addition, Walker teaches using a roll (28) to laminate a secondary backing onto a polyurethane coating on a greige, and also teaches the roll to re-gauge the polyurethane coating (col. 6 lines 10-22; figure 3). Moreover, although not explicitly disclosed, in light of the similarity of the production processes between the claimed invention and a process taught by Walker et al, during a steaming operation, there must inherently have an increase in gelling and blow reaction to a polyurethane coating. In any event, such would have been obvious in the art, because it is old in the art to heat a polyurethane coating on a substrate *"to cause gellation"* to the

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polyurethane coating before a backing layer is applied to the surfacing web (21) as exemplified in the teachings of Anderson, Jr. et al (abstract; col. 3 lines 14-65; col. 4 lines 1-40; figure 2). Also see column 5 lines 1-20 of the Walker et al patent.

Walker differs from claims 1 and 5 in that, Walker does not teach providing a catalyst, and a gas to froth a polyurethane in a dispenser. However, it would have been obvious in the art to provide a catalyst to a polyurethane adhesive and to store and introduce the catalyst in separate storage and delivery line as such is well known in the art as exemplified in the teachings of Gilbert (col. 2 lines 46-66; col. 3 lines 39-50; figure 1) in order to prevent the adhesive from prematurely curing. Note: this claim does not positively require separately storing and delivering a catalyst. Moreover, it would have been obvious in the art to introduce a gas into a polyurethane mixture in a mixing head to froth the mixture as such is old in the art as exemplified in the teachings of Hopkins, Jr. et al (col. 2 lines 3-30; col. 3 line 51 to col. line 16; figure 1).

With respect to claims 2-4 and 12-16, these claims are merely repetition of the above rejected claims, for the same reasons set forth above, these claims would have been obvious in the art for the same reasons set forth above.

With respect to claim 6, see column 3 lines 55-65 of the Walker et al patent.

With respect to claim 7, see figures 1-4 and column 3 lines 35-54 of the Walker et al patent; and, column 51-59 and figure 2 of the Anderson, Jr. et al patent.



With respect to claim 11, Anderson, Jr. et al teaches subjecting a polyurethane coating on a surfacing web to a series of heating operations before and after a backing is applied (col. 3 line 46 to col. 4 line 37; figure 2). It would have been obvious in the art to also subject a polyurethane coating on a greige to a series of steam heating operations before and after a backing is applied in order to accelerate the curing of the polyurethane.

10. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over the references set forth in numbered paragraph 9 as applied to claim 1 above, and further in view of Thompson (5,846,462).

See figure 1 of the Gilbert patent. The connecting tubings 12 and 13 in the Gilbert patent are taken to relatively short. In any event, a preference on whether to use a "*relatively short*" or a relatively long connecting tubing is taken to be well within the purview of choice in the art. One in the art would have considered a trade-off between using a relatively short and relatively long connecting tubing. On the one hand, a relatively short connecting tubing has less flexibility as compared with a relatively long connecting tubing, thus may require more applicators to fully cover a wide substrate. On the other hand, a relatively short connecting tubing is less likely to prematurely cure a polyurethane adhesive in a tubing as compared with a relatively long connecting tubing. Moreover, it is also taken to be well within the purview of choice in the art to use a single mixing head for all dispensing heads or to use a corresponding mixing head for each dispensing heads. None, but only the expected result of providing a polyurethane

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coating applicator would have been achieved. In any event, the recited polyurethane applicator in this claim is old in the art as exemplified in the teachings of Thompson (col. 1 lines 27-45; col. 8 lines 42-49; col. 9 lines 53-60; figure 8). For these reasons, this claim would have been obvious in the art.

11. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over the references set forth in numbered paragraph 9 as applied to claim 1 above, and further in view of anyone of (Leonard et al (US 5,587,184), Keane et al (US 5,622,315) and Jackson et al (US 6,688,580).

Since it is a notoriously common practice in the art to use a coating applicator which has an adjustable die opening to control a flow of a fluid coating material as exemplified in the teachings of Leonard et al (abstract; figures 1-2), Keane et al (title and abstract) and Jackson et al (title, abstract, figure 1A), this claim would have been obvious in the art.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sam Chuan C. Yao whose telephone number is (571) 272-1224. The examiner can normally be reached on Monday-Friday with second Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Blaine Copenheaver can be reached on (571) 272-1156. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Sam Chuan C. Yao  
Primary Examiner  
Art Unit 1733

Scy  
03-26-05